AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A photodiode array comprising:

a semiconductor substrate having a first surface and a second surface opposite said first surface;

a stacking structure disposed on said first surface, said stacking structure including at least one semiconductor layer formed in said structure for making a junction for photoelectric conversion, the junction being substantially parallel to said first surface and located on said first surface or apart from said first surface;

at least a trench formed in and through said stacking structure including the semiconductor layer making a junction for photoelectric conversion, said trench extending at least to said first surface and dividing said ~~stacking structure~~ semiconductor layer into sections;

a first electrode partially formed on each of the sections of said stacking structure allowing an incident of light on the section;

a second electrode formed on said second surface; and

windows formed in the second electrode and located at positions corresponding to the sections of the stacking structure for allowing the incident light to pass through said second surface.

2. (Previously Canceled).

3. (Previously Presented) The photodiode array of Claim 1, further comprising an antireflection layer formed in each of said windows.

4. (Previously Presented) The photodiode array of Claim 1, further comprising antireflection layers covering each of the sections and said trench.

5. (Previously Canceled).

6. (Previously Presented) The photodiode array of Claim 1, wherein said stacking structure further includes a buffer layer formed between said first surface of said substrate and said semiconductor layer.

7. (Previously Presented) The photodiode array of Claim 1, wherein said first electrode has a ring-like shape.

8. (Currently Amended) A photodiode array comprising:

a substrate having a first surface and a second surface opposite said first surface;

an absorption layer formed on said first surface and including a light receiving region therein;

a cladding layer formed on said absorption layer;

a plurality of anodes formed on said cladding layer;

at least one trench formed in and through said absorption layer and said cladding layer and dividing said layers into sections; and

a cathode deposited on said second surface, wherein said cathode comprises windows formed therein and exposing an area on the second surface corresponding to at least a portion of the light receiving region.

9. (Original) The photodiode array of Claim 8, further comprising an antireflection layer formed in each of said windows.

10. (Original) The photodiode array of Claim 8, further comprising a buffer layer formed between said first surface of said substrate and said absorption layer.

11. (Original) The photodiode array of Claim 8, wherein said plurality of anodes are ring shaped.

12. (Original) The photodiode array of Claim 8, wherein said absorption layer has a thickness of at least 3 μm.

13-24. (Previously Canceled).

25. (Previously Presented) A photodiode array made with a method comprising:

depositing an absorption layer on a first surface of a substrate;

depositing at least one electrical contact on a second opposing surface of said substrate, and having at least one window exposing one or more locations on the second opposing surface of the substrate corresponding to selected regions of said absorption layer; and

forming a plurality of trenches having a depth so as to divide said absorption layer into subdivisions.

26-27. (Previously Canceled).

28. (Cancelled)

29-39. (Previously Canceled).

40. (Previously Presented) A photodiode array comprising an absorption layer deposited on a first surface of a substrate, a plurality of light receiving regions formed in said absorption layer, a plurality of trenches formed between adjacent light receiving regions such that said absorption layer is divided into subdivisions, and an electrical contact on a second surface of the substrate opposite the first surface of the substrate, the electrical contact having at least one window exposing a portion of the substrate corresponding to one of the plurality of light receiving regions, wherein said absorption layer has a thickness of at least 3 μm, and wherein said trenches are at least about 9 μm deep.

41. (Cancelled)

42. (Previously Presented) A photodiode array comprising:

an optically transparent substrate;

a layered structure deposited on a first surface of the substrate, said layered structure comprising at least two light absorbing portions;

an electrical contact on a second surface of the substrate and including a plurality of windows, each of the plurality of windows positioned to expose a portion of the substrate opposite the light absorbing portions; and

at least one trench formed into said layered structure and positioned between said at least two light absorbing portions.

43.-46. (Cancelled)

47. (Amended) ~~The photodiode array of Claim 44,~~ A photodiode array comprising:

an optically transparent substrate having first and second opposing surfaces;

a plurality of light absorbing regions formed in a stacked structure on the first surface of the substrate; and

means for reducing crosstalk by inhibiting light transfer between at least two of said light absorbing regions, wherein said means comprises both trenches and a windowed cathode.

48. (Original) The photodiode array of Claim 47, wherein said means comprises an anti-reflective coating on at least some surfaces of said array.

49.-50. (Cancelled)

51. (Previously Presented) The photodiode array of Claim ~~50~~ 1, wherein the junction is a PIN junction, and wherein said semiconductor substrate is made of n-type InP and said semiconductor stacking structure includes a buffer layer made of n-type InP formed on said first surface, an insulator layer made of InGaAs formed on the buffer layer, and a p-type layer made of p-type InP formed on the insulator layer.

52. (Previously Presented) The photodiode array of Claim 51, wherein p-type dopants are partially diffused into the insulator layer.

53. (Previously Presented) The photodiode array of Claim 52, wherein the insulator layer has a thickness of 3 μm or more.

54. (Previously Presented) The photodiode array of Claim 53, wherein the insulator layer has a thickness of 6 μm or more.

55. (Previously Presented) The photodiode array of Claim 52, wherein the p-type dopants are Zn.

56. (Previously Presented) The photodiode array of Claim 51, wherein said first electrode is an anode and said second electrode is a cathode.

57. (Previously Presented) The photodiode array of Claim 56, wherein said first electrode has a ring-like shape.

58. (Previously Presented) The photodiode array of Claim 57, wherein said first electrode includes Ti, Pt, and Au.

59. (Previously Presented) The photodiode array of Claim 56, wherein said first electrode has a square-like shape.

60. (Previously Presented) The photodiode array of Claim 59, wherein said first electrode includes Au and Ge.

SUMMARY OF INTERVIEW

During the interview of May 20, Saito was discussed with reference to Claims 1 and 8. The applicant asserted that Saito lacked any suggestion to form trenches in and through the layers forming photo-detecting elements.